



UNIVERSITI PUTRA MALAYSIA

**COST-SYSTEM FUNCTIONALITY, PERCEIVED USEFULNESS OF
COST INFORMATION AND PERFORMANCE OF OIL PALM
ENTERPRISES IN MALAYSIA**

NEILSON ANAK TERUKI.

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MALAYSIA**

By

NEILSON ANAK TERUKI

**Thesis Submitted to the Graduate School of Management, Universiti
Putra Malaysia, in Partial Fulfillment of the Requirement for the
Degree of Master of Science**

December 2007



**This thesis is dedicated to my mother, my siblings and my friends for
their love and support.....**



Abstract of thesis presented to the Senate of Universiti Putra Malaysia
in partial fulfillment of the requirement for the degree of
Master of Science.

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Chairman : Professor Foong Soon Yau, Ph.D

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Changes in the competitive landscape have made reporting of timely and accurate cost information very critical for organizations to sustain and improve their performance. This is particularly relevant for companies competing based on cost efficiency and the oil palm industry is one such industry. Since external market forces determine the price of palm oil, oil palm enterprises have to continuously lower their production costs to sustain and increase profitability. Greater cost management leads to greater efficiency which subsequently leads to better performance. This study investigates the effects of cost-system functionality on the performance of oil palm enterprises in Malaysia. The moderating effect of manager's perception of the usefulness of costing information is investigated, since the effectiveness of cost information is also dependent on the perceived usefulness of cost data.

A structured questionnaire was used to gather data from oil palm business enterprises located in Sarawak. Data collection was confined to Sarawak in order to avoid the

confounding effects of soil and climatic conditions on the performance of oil palm enterprises. The results of this study generally indicate that managers of oil palm enterprises value the cost information provided by highly functional cost system. All the three dimensions of cost functionality are found to be positively associated with the performance of the oil palm enterprises. These findings support the premise that high functional cost systems supply managers with more relevant data, which are used to make performance-enhancing decisions. The positive relationship between cost functionality and performance suggests that is appropriate for the oil palm industry because it is performance-enhancing. The rigid requirements to comply routine estate operating and reporting procedures may have contributed to the insignificant moderating effect of a manager's perceived usefulness on the cost-functionality – performance relationship. The results of this study suggest that when activities are highly routine and operational in nature, high cost system functionality could aid performance, irrespective of the perceived usefulness of cost information. Perceived usefulness of cost information may influence organizational performance in, perhaps, a less structured environment.

Abstrak tesis yang di kemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian daripada keperluan untuk ijazah Master Sains.

**FUNGSIAN SISTEM KOS, TANGGAPAN KEBOLEHGUNAAN KOS DATA
PRESTASI PERUSAHAAN YANG BERASAKAN KELAPA SAWIL DI
MALAYSIA**

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Pelaporan maklumat kos yang jitu dan tepat adalah kritikal untuk memastikan sesebuah organisasi itu dapat mempertahankan dan menambahbaik tahap pencapaiannya dalam mengharungi arus perubahan dunia korporat yang kompetitif. Pelaporan maklumat kos yang tepat amat diperlukan oleh industri yang bersaing berlandaskan kecekapan kos dan salah satu daripada industri tersebut ialah industri kelapa sawit. Disebabkan harga kelapa sawit dipengaruhi oleh factor pasaran luaran, syarikat-syarikat berasaskan kelapa sawit haruslah sentiasa mengawal kos pengeluaran untuk meningkatkan keuntungan. Penekanan terhadap pengurusan kos akan mendorong kepada tahap keefisyenan yang tinggi dan seterusnya menyumbang kepada pencapaian syarikat yang lebih baik. Kajian ini meninjau kesan fungsian sistem kos terhadap pencapaian perusahaan-perusahaan berasaskan kelapa sawit di Malaysia. Memandangkan keberkesanan maklumat kos bergantung kepada tanggapan kebergunaan kos data, kesan pemoderat tanggapan para pengurus terhadap kebergunaan maklumat kos turut dikaji.

Soal selidik berstruktur telah dibangunkan sebagai instrumen untuk mengumpul maklumat daripada syarikat-syarikat kelapa sawit di Sarawak. Untuk mengawal faktor kesuburan tanah dan cuaca yang mempunyai kesan terhadap pencapaian syarikat kelapa sawit, hanya syarikat-syarikat kelapa sawit di Sarawak sahaja akan dibanci. Secara umumnya, keputusan analisis regresi mendapati para pengurus syarikat-syarikat kelapa sawit mengambil berat terhadap maklumat kos yang diperolehi daripada kos sistem berfungsi tinggi. Bahkan, keputusan analisis regresi juga membuktikan wujudnya perhubungan positif antara tiga dimensi fungsian kos dan pencapaian relatif syarikat-syarikat kelapa sawit. Dapatan ini mengukuhkan lagi andaian bahawasanya lebih banyak maklumat berguna disampaikan kepada para pengurus melalui sistem kos yang baik fungsinya, lantaran itu maklumat yang para pengurus perolehi dapat digunakan dalam membuat keputusan berkaitan penambahbaikan syarikat terbabit. Hasil kajian ini juga sejajar dengan strategi kepimpinan kos yang menitikberatkan keefisienan kos yang seringkali digunakan oleh industri komoditi, termasuklah industri kelapa sawit. Disebabkan oleh tahap kepatuhan yang ketat yang diamalkan dalam melaksanakan operasi rutin di estet-estet yang terlibat, perkaitan pemoderat tanggapan para pengurus terhadap kebergunaan fungsian kos dan tahap pencapaian syarikat-syarikat kelapa sawit didapati tidak mempunyai kesan yang signifikan. Keputusan kajian ini mendapati apabila tahap rutin aktiviti-aktiviti adalah tinggi dan pengoperasiannya, sistem kos fungsian yang tinggi akan menyumbang kepada tahap pencapaian syarikat tanpa mengambilkira tanggapan para pengurus terhadap kebergunaan maklumat kos. Natijah tanggapan para pengurus terhadap kebergunaan kos maklumat mungkin akan lebih terserlah dalam persekitaran industri yang lebih luwes.

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I certify that an Examination Committee met on **1 October 2007** to conduct the final examination of **Neilson Anak Teruki** on her **Master of Science** thesis entitled **“Cost-System Functionality, Perceived Usefulness of Cost Information and Performance of Oil Palm Enterprises in Malaysia”** in accordance with the Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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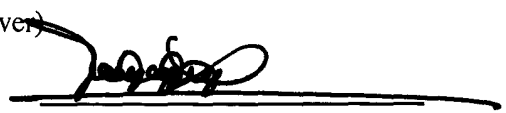
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BIODATA OF THE AUTHOR



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LIST OF ABBREVIATIONS

MPOB	Malaysian Palm Oil Board
FFB	Fresh Fruit Bunches
MAS	Management Accounting System
ABC	Activity-Based Costing
MIS	Management Information Systems
CPO	Crude Palm Oil
CSF	Cost System Functionality
OCF	Overall Cost System Functionality

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter sets the background for the thesis by reviewing and discussing the criticisms of the traditional cost system and the current state of cost system, background of the oil palm industry, its importance and the challenges faced by the industry, cost management in oil palm industry, the problem statement, research objectives, significance and contribution of the study.

1.2 Background of the Study

The 1980s witnessed, after a long silence, a renaissance of cost accounting issues. During the last decade both academics and practitioners started increasingly to question prevailing cost accounting thinking. During 1990s, we have seen a significant shift in the cost accounting and management (Maher and Deakin 1994).

This interest in cost system research appears to have been triggered by two main factors. First, the environment in which cost system is undertaken has undergone substantial change. This includes changes in information technology, cost structures and the manufacturing and competitive environment. Second, debate concerning cost system was initiated by several notable criticisms of traditional costing systems (e.g., Cooper, 1990a, b; Johnson and Kaplan, 1987; Kaplan, 1984, 1990) and the

emergence of management accounting innovations (e.g. ABC, ABCM, throughput accounting, balance scorecard).

The way products and services is manufactured has changed and thus the way costs are measured and allocated. In particular, changes occurred in the competitive business environments with focuses in new competitive strategies, new cost structures, rapid development in technologies, and customer services. The emergence of a global and borderless market and the introduction of new management structure have imposed pressure for a change in the current cost accounting practices (Blocher et al. 1999). For example, it is even more crucial now for businesses which want to remain competitive have excellent control over their costs. Otherwise, these businesses may cease to operate in the near future, as they will not be able to compete very effectively.

Several authors (e.g., Ashworth and Gwynne, 1993; Cooper, 1989; 1990 a,b; Johnson and Kaplan, 1987) have criticized traditional cost and management accounting techniques in an attempt to explain the lack of efficient performance of Western industries (particularly U.S.) despite new technological innovations. Such criticism relates to the failure of traditional cost and management accounting practices to provide detailed information on activities important for organizations, failure to initiate change and their inability to promote management accounting innovations in coping with the requirements of a changing environment during the past two decades and failure to provide relevant, timely and accurate information for management planning, control and decision making purposes (Baines & Langfield-Smith, 2003; Cavalluzzo & Ittner, 2003; Maiga & Jacobs, 2003; Gosselin, 1997; Beng, Schoch, & Yap, 1994; Johnson and Kaplan, 1987; Cooper, 1989; Kaplan, 1984). Similarly, the

academic literature has been critical of traditional management accounting systems in particular for their lack of efficiency and capability to provide detailed and up-to-date information and to satisfy decision makers and potential users of such information. Lawrence and Ratcliffe (1990) support this argument by providing survey evidence of levels of dissatisfaction among both management accountants and managers with the cost and management accounting techniques then being used in industry. In addition, Kaplan (1984) has argued that there has been no development of management accounting techniques during the period of 1925 to the 1980s. The critical article of Kaplan's inspired the development of advanced management accounting techniques.

In an attempt to alleviate the problems caused by the mismatch between traditional cost accounting systems and the modern business environment, a significant number of new ideas have been introduced for over the last 10–15 years (Christian and Bjorneneak, 2005; Abernethy et. al, 2001). There is now a substantial and growing literature which provides evidence that change has become a prominent feature of contemporary management accounting practice mainly in the area cost system design. This provides evidence that cost system is very important and information provided by this system is very crucial in today's business environment. During 1990s a stream of technical innovations emerged and descriptions of their implementation in practice become widespread. Example of such innovations are activity-based costing (ABC) (e.g. Innes and Mitchell, 1990), activity-based cost management (e.g. Friedman and Lyne, 1995), life cycle costing (e.g. Shields and Young, 1991), target costing (e.g. Dutton and Ferguson, 1996), quality costing (e.g. Clark, 1985), functional cost analysis (e.g. Yoshikawa et al., 1995), throughput

accounting (e.g. Darlington et al., 1992), strategic management accounting (e.g. Simonds, 1981), shareholder value techniques (e.g. May and Bryan, 1999), EVA (e.g. McLaren, 1999) and the balanced scorecard (e.g. Kaplan and Norton, 1992).

In spite of all the criticisms and claims that the management accounting practices have changed, the traditional cost accounting techniques remain popular. Empirical research on management accounting practices have shown that the traditional approach is still widely used in practice due to lack of knowledge of other alternatives and/or the high financial costs of changing the costing systems (e.g. Cohen and Paquette, 1991; Drury et. al., 1993; Drury and Tayles, 1995; Innes and Mitchell, 1995; Chenhall and Langfield-Smith, 1998; Bromwich and Bhimani, 1994; Edwards and Emmanuel, 1990; Hawkes, Fowler, and Tan 2003, Garg et al. 2003).

Having dealt with the turbulence changes in the current business environment, an appropriate cost system design is needed. Chenhall and Morris (1986), Johnson (1990) and Mia and Chenhall (1994) argue that provision of the necessary information by Management Accounting System (MAS) assists managers in enhancing the quality of decisions they make, thereby improving their organizational performance. Consistent with the above argument, more functional cost system may be needed. Accounting literature suggests and identifies at least three critical attributes of cost system design: the level of detail provided, the ability to disaggregate cost according to behavior, and the frequency with which information is reported (Pizzini, 2006). Cost systems with greater functionality are those that can provide greater detail, better classify costs according to behavior, and report cost information more frequently.

Overall, the need to improve the accuracy costing information was driven by changes in the competitive landscape as well as increased global competition (Cooper, 1988). The ability to make fast changes is critical, as illustrated by the new management concepts of speed to market and agile manufacturing (Blocher et al. 1999:5). Designing the appropriate cost system and its effect towards performance is still the major interest of the researchers and practitioners in the area of management accounting. The emerging of management accounting innovations has proved this notion.

Nowadays, costing information is extremely important for effective decision making. Since criticism of traditional costing systems has been intense, mainly due to its inability to reflect the current manufacturing environment, more innovative and effective strategic cost management implemented by some companies to reach competitive advantage. The information provided by the cost system is very important in assisting the managers in decision making, strategic, tactical, and operational control. Providing appropriate cost information is crucial as this may assist the managers to make appropriate decision making and running the operation of the organizations.

1.3 Oil Palm Industry – Introduction, Its importance and Market Potential

The Malaysian palm oil business has over nearly a century and a half of growth. Oil palm was first introduced to Malaysia (Malaya then) in 1870 and is today a multibillion ringgit industry. Palm oil is exported to over 140 countries. In particular over the past 25 years, the Malaysian Palm Oil Board (MPOB) through the merger of

its fore runners, the Palm Oil Research Institute of Malaysia (PORIM) and Palm Oil Registration and Licensing Authority (PORLA) have accomplished much. Through working closely with the industry members, R&D of MPOB findings have helped to raise palm oil production from 2.5 million tonnes in 1979 to 14.96 million tonnes in 2005, an expansion feat unparalleled in history (Yusof and Chan, 2005). The share of the agriculture sector to gross domestic product (GDP) was 8.2 per cent in 2005 and the major contributor of the share was the oil palm sector (9th Malaysia Plan 2006 – 2010). The capability of the industry also expanded with employment over half the agricultural work force of 1.399 million people working in its 3.804 million hectares of oil palm, 370 mills, 47 refineries, 39 kernel crushing plants, 17 oleochemical plants and 33 bulking installations at the end of 2003 (Yusof and Chan, 2005).

The Malaysian palm oil industry is economically big and diversified. According to the latest statistics, the planted area in 2005 stood at 4.0 million hectares and the increase in planted area mainly in Sabah and Sarawak (Yusof and Chan, 2005). This represents about 66% of the total 6.075 million hectares designated for agriculture under the National Agriculture Plan (NAP3) (1998-2010).

The palm oil industry is very important to Malaysia. The industry continues to benefit from the government's effort to modernize and transform it into a large and commercially viable sector. This industry has contributed towards economic growth and export earnings (9th Malaysia Plan 2006 – 2010). Yusof and Chan (2004) argue that palm oil industry is backbone of country's development especially rural development and political stability. The financial benefits from the palm oil industry had indeed helped the country to weather the effects of the melt down of the Asian

Financial Crisis in 1997/8. Over the past six years from 1998 to 2003, after the Asian financial crisis in 1997, the industry had performed well and earned foreign exchange of RM 22.6, 19.2, 14.9, 14.1, 19.6 and 26.5 billion in each of years, respectively (Yusof and Chan, 2005). Chandran (2006) state that the Malaysian oil palm industry is a significant foreign exchange earner. For example, in the year of 2004, this industry has contributed an amount of RM 30 billion or USD 7.9 billion.

According to 2006/2007 Economic Report, 60% of the total planted area, is owned by private estates, 30 % by smallholders organized under Federal Land Development Authority (FELDA), state schemes, Federal Land Consolidation And Rehabilitation Authority (FELCRA) and Rubber Industry Smallholders' Development Authority (RISDA) and while the rest are owned by independent smallholders. Further at the end of 2003, the industry employed over half the agricultural work force of 1.399 million people (Yusof and Chan, 2004). All these pointed to the beneficial effect of the palm oil industry as a vehicle to eradicate rural poverty. Apart from this, Yusof and Chan (2004) argue that the Malaysian palm oil industry is a steady supplier of affordable food, non-food, biocomposites, nutritional and pharmaceutical products and also is a showcase for environmental improvement.

The production of Malaysia crude palm oil (CPO) continued to increase for seven consecutive years reaching 14.96 million tonnes in 2005, as shown in Table 1.1. The impressive production growth was mainly attributed to the increase in matured areas, enhanced plantation and mill management, recovery in fresh fruit bunches yield per hectare to 18.88 tonnes and continued improvement in the oil extraction rate (OER) to 20.15%.

The total export volume of Malaysia oil palm products, constituting palm oil, palm kernel oil, palm kernel cake, oleochemicals and finished products, increased to 18.62 million tonnes in 2005 from 17.36 million tonnes in 2004. It is heartening to note that the massive increase in production was supported by an increase in the price.

Of the export, 90% was used as food and 10% for oleochemicals (Yusof, 2004). The oil palm industry in 2006 is forecast to remain bullish. The market potential for oils and fats remains good into the future considering the increases in population, income as well as per capita consumption especially in countries with currently low income and low consumption.

Table 1.1: A Summary on the Performance of the Malaysian Oil Palm Industry in 2004 - 2005

	2004	2005
PLANTING (Hectares)		
Area	3,875,327	4,049,201
PRODUCTION (Tonnes)		
Crude Palm Oil	13,976,182	14,961,658
Palm Kernel	3,661,456	3,964,034
Crude Palm Kernel Oil	1,644,445	1,842,631
Palm Kernel Cake	1,894,017	2,095,877
Oleochemical Products	1,788,864	2,019,258
EXPORTS (Tonnes)		
Palm Oil	12,581,792	13,445,511
Palm Kernel Oil	780,375	850,790
Palm Kernel Cake	1,795,918	2,031,995
Oleochemical Products	1,770,220	1,834,178
Finished Products	374,602	391,389
Others	57,639	67,816
TOTAL EXPORTS (Tonnes)	17,360,546	18,621,679
EXPORT REVENUE (RM Million)		
Palm Oil	22,175.6	20,033.7
Palm Kernel Oil	1,972.4	2,182.2
Palm Kernel Cake	351.3	353.6
Oleochemical Products	5,040.0	5,137.8
Finished Products	850.2	829.1
Others	54.0	63.3
TOTAL REVENUE (RM Million)	30,443.5	28,599.7
Oil Extraction Rate (OER) (%)	20.03	20.15
YIELDS (Tonnes / Hectare)		
Fresh Fruit Bunches (FFB)	18.60	18.88
OIL	3.73	3.80

Source: MPOB (Overview 2005 http://econ.mpob.gov.my/economy/su_review2005.htm)

Mohd. Nasir Amiruddin et. al.(2005) state that there are more than 17 major oils and fats produced and traded in the world. Palm oil with exports of 21.68 million tonnes accounted for 48.9% or the largest share, ahead of soyabean oil with 9.64 million tonnes accounted for 21.6% of the vegetables oils and fats market. As indicated in Table 1.2 and Table 1.3, Malaysia is the world's largest producer and exporter of palm oil. The export volume of palm oil by Malaysia was 13.45 million